

In re Patent Application of:  
**COFFA ET AL.**  
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*B1 and* second upper lightly doped epitaxial layer. In such a case, the lower substrate layer would have a lower refraction index and would act as a reflective layer for the incident light. --

Please replace the paragraph beginning at page 8, line 25 with the following rewritten paragraph:

*B2* -- An additional oxide layer is deposited over the whole semiconductor portion and a masked process is used to define contact openings over the P+ region 10 and over the N+ regions 19. A final deposition step of a metal layer, followed by a lithography step, is performed to define the metal contacts on the P+ and N+ regions 10 and 19, as shown in Figure 8. The resulting structure is clearly shown in Figure 9, which is a schematic vertical cross-section and perspective view of the semiconductor device 1 including a cavity or waveguide and a P/N diode junction. --

In the Claims:

Please amend the claims as follows:

*Sub C1*  
*B2* 28. (Amended) A semiconductor device for electro-optic applications comprising:  
 a semiconductor substrate;  
 a doped P/N junction integrated with said semiconductor substrate, said P/N junction comprising a depletion layer and having a shape defining a waveguide, said depletion layer comprising at least one rare-earth material for providing a coherent light source; and